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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. – Computer Science and Engineering

Semester End Examination; Dec - 2016/Jan - 2017

Distributed Computing Systems

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1	a.	Describe any two challenges in distributed systems.	10
	b.	Discuss briefly software and hardware service layers in distributed system.	5
	c.	Explain any two characteristics of inter-process communication.	5
2	a.	Explain transparency in distributed systems.	5
	b.	Describe event ordering in distributed system.	8
	c.	Define Marshalling and Un-marshalling. Explain Marshalling in CORBA.	7

UNIT - II

3	a.	Explain object model.	10
	b.	Discuss the importance of choice of process host in creation of new process in distributed system.	10
4	a.	Discuss RMI invocation semantics design issue of RMI.	10
	b.	Explain worker pool and thread per request architecture with neat diagrams.	10

UNIT - III

5	a.	Discuss the characteristics of file systems.	10
	b.	Explain briefly domain name system.	10
6	a.	Write a note on distributed file system requirements.	10
	b.	Explain with neat diagram non-recursive and recursive server controlled navigation in name server.	10

UNIT - IV

7	a.	Describe Lamport logical clock to synchronize clock in distributed system with Lamport timestamps for the event.	10
	b.	Illustrate with neat diagrams Bully algorithm to elect coordinator.	10
8	a.	Explain Cristion's method for synchronizing clocks in distributed system.	10
	b.	Explain with a suitable diagram Ring based election algorithm.	10

Contd.....2

UNIT - V

9	a.	What is transaction in distributed system? Explain atomic transaction and ACID property.	5
	b.	Explain lost update problem and inconsistent retrievals problem under concurrency control.	5
	c.	Discuss two-phase commit protocol. Explain its different operations.	10
10	a.	Explain the following with respect to distributed systems: i) Deadlock ii) Deadlock prevention iii) Deadlock detection.	10
	b.	Illustrate with a neat diagram flat and nested transactions in distributed system.	10

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